Ecological impacts of different harvesting scenarios for temperate evergreen rain forest in southern Chile-A simulation experiment

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Current forestry practices in Chile largely rely on exotic tree plantations, and limited management experiences are available for the species-rich native evergreen rain forests. Yet, conservationists and forest scientists call for sustainable management of native forests as an alternative to plantations so as to maintain important ecosystem services. We parameterised the process-based forest growth model FORMIND for a Valdivian coastal temperate rain forest in Chiloé Island, Chile, to assess the ecological implications of different logging practices including selective logging and strip-cutting. We tested the model by comparing simulation results with field data from the study site and carried out an extensive sensitivity analysis to explore the impacts of parameter values on model results. Simulated logging practices were compared in regard to expected timber harvest and long-term impacts on forest structure and composition. Results showed that highest harvests could be achieved when